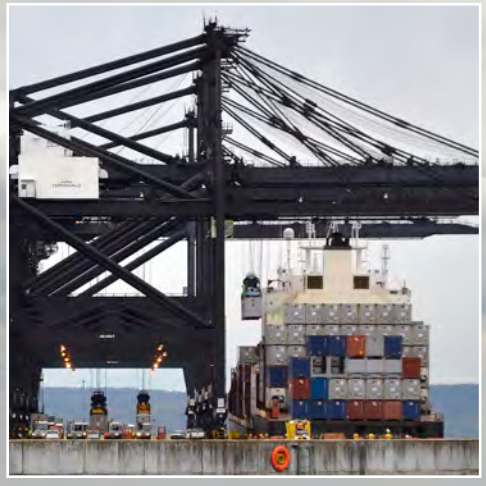
Washington State Department of Transportation

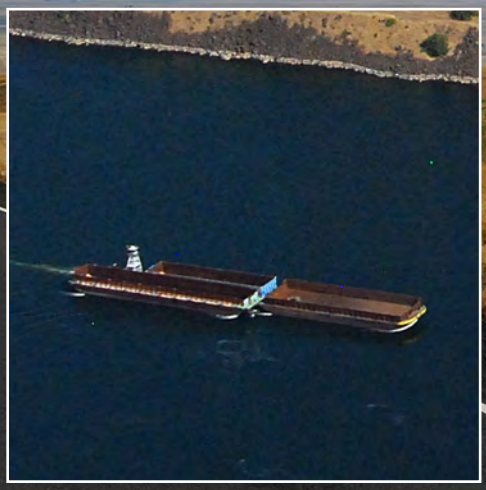
Washington State
FREIGHT MOBILITY PLAN
EXECUTIVE SUMMARY

October 2014









We can meet this challenge together

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INTRODUCTION

Washington's regional and state economies, workers and residents depend on an effective and efficient freight transportation system.

Washington is one of the most trade-dependent states in the nation. Goods ranging from milk and medicine to Boeing plane parts ship into, out of and around the state using every part of our freightsystem: highways and roads, railroads, waterways, and marine and airports. Industry supply chainsmoving goods from production to distribution and processing centers, ultimately to consumers via the State's Freight Economic Corridors produced over $129 billion in regional domestic output in 2013









WASHINGTON'S FREIGHT SYSTEM

Washington's freight system is important to the economy of our state and country in many ways.

The policy, operational and capital project recommendations in the 2014 Washington State Freight Plan will help maintain our economic success and competitive edge. The plan goal, objectives and recommendations were developed in cooperation with stakeholders representing goods shippers and receivers, freight carriers, local and regional governments, ports, Tribes, air quality experts, and other system users.

The plan's three objectives are to:

- Develop an urban goods movement system that supports jobs, the economy, and clean air for all; and provides goods delivery to residents and businesses.
- Maintain Washington's competitive position as a Global Gateway with a robust freight system able to serve the multimodal needs of trade and international and interstate commerce, as well as state and national export initiatives.
- Support rural economies' farm-to-market, manufacturing, and resource industry sectors.

The Freight Plan includes several advanced features:

- It is a multimodal plan that examines the needs of the entire freight system.
- With input from every Metropolitan Planning Organization (MPO) and Regional Transportation Planning Organization (RTPO) in the state, and the other aforementioned stakeholders, the plan identified and mapped the Washington State Freight Economic Corridors, including first and last mile routes connecting freight-intensive land uses to high-volume routes.
- It is a performance-based plan, in compliance with the Moving Ahead for Progress in the 21st Century Act (MAP-21), and it set measurable freight performance goals for both the State Truck and the Waterway Freight Economic Corridors.
- It has developed and tested methods to analyze the economic impacts of truck freight improvements on highways.
- It systematically analyzes current performance gaps and needs on highways in State Truck Freight Economic Corridors, incorporates freight rail needs identified in the State Rail Plan. It drew on the ports and other stakeholders for waterway, air freight, and intermodal facility analyses.
- The Washington State Department of Transportation (WSDOT) and the Freight Mobility Investment Board (FMSIB) jointly developed a new process to include Tribal, MPO, RTPO, port and state freight strategies to improve performance on the Washington State Freight Economic Corridors in the Plan.

FLYING HIGH WITH FREIGHT SUPPORT: WASHINGTON'S AEROSPACE INDUSTRY

Washington's aerospace industry, which produced $51.2 billion in gross business income in the state in 2012, relies on freight transportation to deliver aircraft components to shop floors and plants as well as the equipment and tools their workers need.

Consider world-wide industry leaders like Orion Aerospace International and The Boeing Company, which have established manufacturing, service and technology partnerships with suppliers and partners throughout the state and around the world.

With a supply chain that includes assembly plants in Everett and Renton, Boeing needs both an efficient highway network in the central Puget Sound region and multistate highway corridors between plants that allow over-dimensional truck loads to support its worldwide business.

Without the proper infrastructure and freight support between its plants, what will be the impact on the company's $81.7 billion* revenue and the company's presence in Washington?

*Company Overview

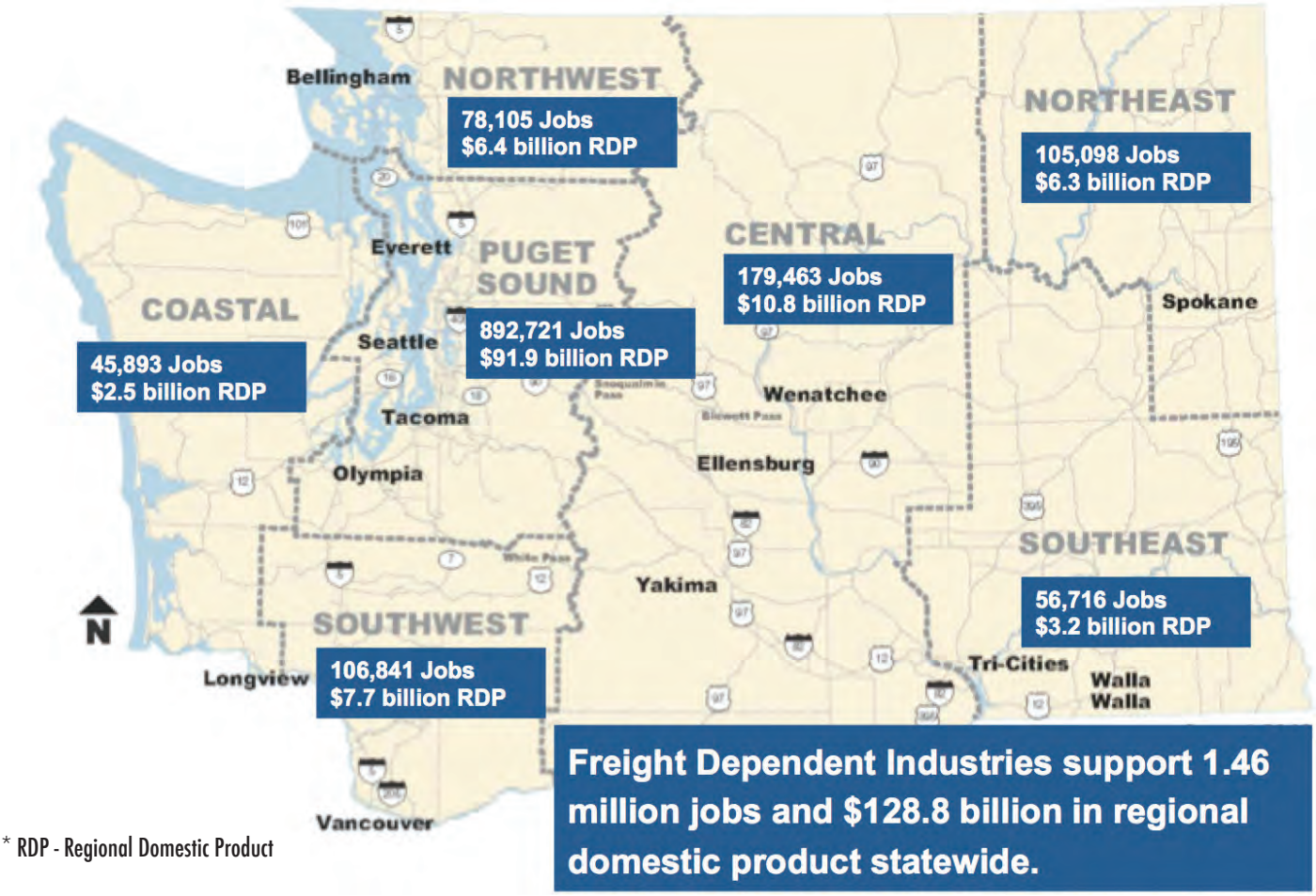
There are five key findings in the Washington State Freight Plan.

1. Washington has a strong freight system

Every region of the state is reaping the benefits of past investments in the system. Manufacturers, farmers, retail and wholesale firms, construction and timber companies provided almost 1.5 million jobs and $129 billion in gross domestic product for Washington State. These sectors must have reliable and efficient multimodal freight services to succeed.

Additional economic benefits:

- Employment for nearly half of Washington residents. In 2012, freight-dependent industries accounted for 44 percent of the state's jobs[1].
- Increased economic opportunities. Freight-dependent industries are growing. Sectors that rely on the freight system such as wholesale and retail, manufacturing, construction, transportation, agriculture, and timber/wood products, grew by 2.6 percent, from 1.20 million jobs in 2011 to 1.23 million jobs in 2012[2]. Between Jan 2010 and June 2014 the manufacturing, construction and logging sectors added 50,000 jobs in Washington State, and the transportation and retail and wholesale sectors added 54,000 jobs[3].
- The value of Washington's position as a Global Gateway. In 2012, total imports and exports in the state were valued at $123.2 billion. International logistics companies value Washington's diverse modes of freight transportation, which brings jobs and tax dollars to our state.



* RDP - Regional Domestic Product

1 *This statistic is calculated from Washington State Employment Security covered employment data for the 60 most freight-dependent industry sectors stratified by 3-digit NAICS code in Washington State.*

2 *Washington State Employment Security Department, Covered Employment Classified by Industry, Q1 2011 & Q1 2012.*

3 *Washington State Employment Security Department, https://fortress.wa.gov/esd/employmentdata/reports-publications/economic-reports/washington-employment-estimates*

FOOD FOR THOUGHT: WASHINGTON STATE'S APPLE INDUSTRY

Apples are one of the top agricultural products in the state by value. Growers and packers rely on multiple components of the freight system to deliver apples from Washington's orchards to kitchen tables around the world.

They're first trucked to processing facilities, and then delivered in 40-pound boxes throughout the state and to other regions like the Midwest and East Coast using both truck and rail.

It's an international business, too – Washington exports approximately 38 million boxes of apples. In 2012, 10 million boxes were exported to Mexico and 7 million were exported to Canada, both by truck. The remaining 21 million were trucked to container ports in the Puget Sound to be shipped to 42 other countries.*

*Washington State Apple Commission and Washington Growers Clearing House Association.

2. Preserving Washington's multimodal freight system is our greatest need.

The existing multimodal freight system helped create the state's economic success. The State Truck, Rail and Waterway Freight Economic Corridors must be in good condition to ensure that shipments arrive safely, reliably and efficiently. The Freight Plan details the multimodal maintenance and preservation problems on the State Freight Economic Corridors.

There are poor pavement and bridge conditions on the State Truck Freight Economic Corridors.

- Over 3,700 highway lane miles are due or past due for preservation projects, but WSDOT will only be able to repave about 1,100 in 2013-15.
- There are nearly 3,800 state-owned bridges; without new revenue 71 steel bridges could become structurally deficient due to lack of painting in the next ten years. Local agencies reported that 25 of the 166 local bridges on the State Truck Freight Economic Corridors are in poor condition.
- Washington does not maintain a core all-weather county road system within the State Truck Freight Corridors. To protect these routes from further deterioration, counties will close them to heavier trucks up to two months in the spring freeze and thaw-season.

Short-line railroads are struggling to meet basic preservation needs.

- Some short-line railroads continue to struggle to overcome decades of deferred maintenance along their right of way.
- Deferral of freight rail maintenance can lead to equipment and track deterioration that requires substantial investment to repair.
- Short-line railroad operators named bridge repairs as one of their highest priorities.

Lack of preservation and maintenance of the Columbia-Snake River waterway.

- Recent intense and frequent storms have accelerated degradation of the jetties at the mouth of the Columbia River.
- High, sustained river flows make it difficult to maintain the federally-authorized navigational channel depth.

Reduced maintenance and deferred freight system preservation is expensive for farmers, manufacturers, and retail firms such as grocery stores and restaurants.

- When poorly-maintained short-line railroads are restricted to 10 mph, and the barges plying the Columbia-Snake River system cannot be fully loaded because the channel depth is not maintained, farmers pay more to move every bushel of wheat grown in Washington.
- Heavier trucks are not allowed to use local and state bridges that are in poor condition. Instead, they must take long detours that add to the cost of products manufactured in Washington State.
- When highway and road pavement is in poor condition, goods are damaged in transit and safety is at risk. Traffic delays result in increased costs of food and other consumer goods.

Increasingly crowded areas near freight rail sites and ports is creating competition for space and access routes.

- In urban areas there is a need to preserve critical freight-intensive land uses both at marine and air cargo ports, as well as in the state's major warehouse districts supplying food and other goods to cities.

KEEPING THE INVENTORY STOCKED: RETAIL/WHOLESALE SUPPLY CHAINS RELY ON FREIGHT

Serving a range of businesses from restaurants and grocery stores to hospitals and gas stations, Washington's distribution system produces up to 80 percent of all truck trips in the metropolitan area. With a high daily delivery volume (grocery stores receive an average of 2-3 truck delivery per day), it's no surprise that the retail/wholesale sector employs 735,000 employees and produced more than $247 billion in gross business income in 2012.

However, success for distribution companies in this sector requires efficiency and reliability. Hospitals and pharmacies cannot wait for medical supplies and small businesses that sell consumer goods such as food, electronics, and clothes cannot make sales if goods are not in stock.

3. Top trends shaping future freight demand are population growth, U.S. energy production, port competition, and automated vehicles.

Population Growth. Most of the demand on the State's Freight Economic Corridors will be driven by future population and business growth. In 2010, Washington's population was 6.7 million. By 2030, the Washington State Office of Financial Management[4] estimates it will climb to over 8.1 million.

Cities will see the most growth. The central Puget Sound region alone will add another 760,000 residents by 2030. Clark County is expected to add over 110,000 and Spokane over 87,000 residents by 2030. The urban truck freight delivery system will face additional congestion and pressure in response to business demands to move goods at the right cost and the right time.

Energy Production. A structural shift in U.S. crude oil production is underway, making energy the second important trend affecting the state's freight systems. As a quicker, more flexible alternative to new pipeline projects, crude oil producers are increasingly turning to rail to transport oil across the country.

The lower price of natural gas (compared to diesel) will influence truck, rail and marine carriers to consider switching to low-cost liquefied natural gas or compressed natural gas in the near term. For long-haul truck companies to make this change, liquefied natural gas fuel stations open to all users will need to be located every 400 miles on major multi-state truck corridors.If new large coal-export facilities are permitted in the state and international demand persists, there will be much more coal train traffic on the mainline railroad system.

Increased competition facing Washington ports. Up to 70 percent of containers imported through the Ports of Seattle and Tacoma in the past decade were destined for the Midwest and Eastern seaboard.

However, in the next six years global shipping lines will deploy larger ships to reduce costs and reduce the number of ports calls. Excess port terminal capacity already exists up and down the West Coast, putting pressure on both landlord ports' and terminal operators' pricing power.

Additionally, the Panama Canal expansion will open in 2015 or 2016, potentially increasing all water services through the canal at the expense of West Coast ports. The Canadian government will continue to invest in the Ports of Vancouver and Prince Rupert. Nearly all (99 percent) of the cargo processed through Prince Rupert moves by rail. According to the Journal of Commerce, it cost $300 to $400 less to ship a container from Asia to Chicago through Prince Rupert versus other West Coast ports in 2014.

4 *http://www.ofm.wa.gov/pop/gma/projections12/projections12.asp*

New equipment and technology such as automated commercial vehicles. Despite media reports, driverless trucks will not be operating on U.S. highways in the next six years. Instead, cooperative trucks that use sensors to communicate with other vehicles and roadway infrastructure will gain ground in the mid-term. These technologies offer many benefits to trucking companies and drivers, public sector highway and road owners and operators, and the traveling public including significant safety gains, fuel savings, increases in lane capacity, and enhanced traffic flow.

4. If we want more jobs, more regional domestic product, and a larger tax base in the future we must make needed policy changes at the federal and state levels and invest in freight mobility improvements.

WSDOT studied the impacts of a 20-percent increase in truck congestion and found that it would result in a net loss of more than 27,250 jobs and $3.3 billion in economic output in the state.[5] The study results are based on a survey of over 1,000 private-sector companies in freight-dependent industries and also found that additional congestion will cause over $14 billion[6] of increased operating costs to Washington's freight-dependent industries.

To address current and future congestion and other freight mobility problems, the Freight Plan details near- and long-term policy and operational and capital project investment strategies that were developed in collaboration with multiple stakeholders and system users.

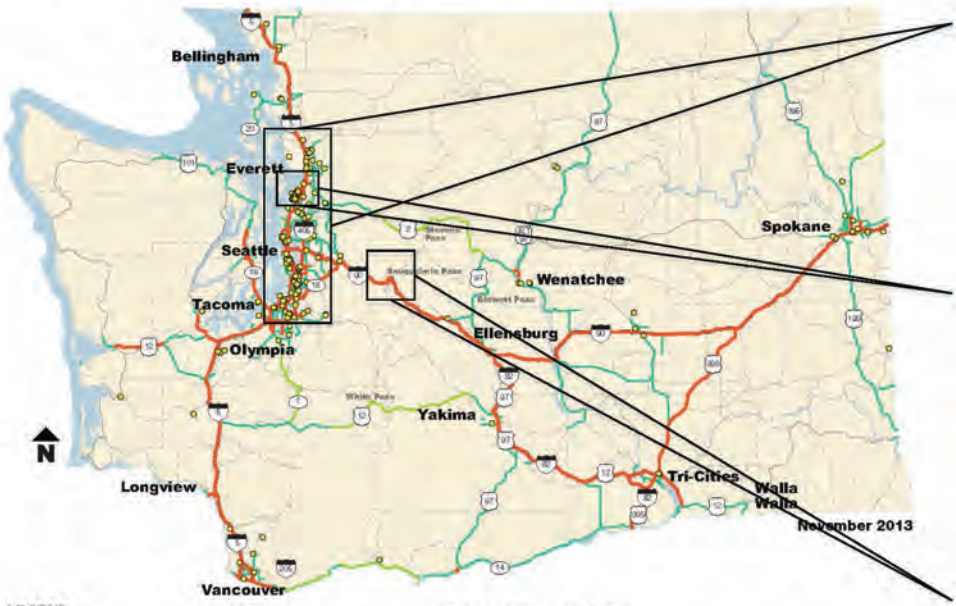
- To determine policy recommendations, the Washington State Department of Transportation (WSDOT) held multiple discussions with freight stakeholder groups across the state during 2013 and 2014. The Washington State Freight Advisory Committee also provided detailed policy recommendations.
- Highway operational and capital project recommendations for the State Freight Economic Corridors were drawn from the WSDOT Unfunded System Investments list[7]. WSDOT recently adopted two internal reforms to improve transportation decision making. In Least Cost Planning and Practical Design[8] processes, WSDOT will prioritize projects that:
    1. Operate Efficiently – This approach gets the most out of existing highways by using traffic management tools to optimize the flow of traffic and maximize available capacity.
    2. Manage Demand – Whether managing demand on overburdened routes, shifting travel times, using public transportation, or reducing the need to travel altogether allows our entire system to function betterv.
    3. Add Capacity Strategically – Targeting our worst hotspots or filling critical system gaps to best serve an entire corridor, community or region means fixing bottlenecks that constrain the flow.
- Freight rail recommendations were developed in the 2014 State Rail Plan.
- WSDOT and FMSIB jointly asked MPOs, RTPOs, Ports and Tribes, for their freight priority projects as another step towards a unified State Freight Mobility Plan.
- State Waterway Freight Economic Corridors project recommendations are based on information provided by ports and the Pacific Northwest Waterway Association.

5 *http://www.wsdot.wa.gov/NR/rdonlyres/0DA2A843-8BC3-41B7-A0F3-C72A610BEA90/0/EconomicImpactCongestion.pdf*
6 *In 2011 dollars.*
7 *http://www.wsdot.wa.gov/Funding/SystemInvestments.htm*
8 *These reforms are explained in Chapter 10.*

WSDOT also mapped the state's highest-value manufacturing supply chain, aerospace, and the four highest-value agricultural supply chains. Each map includes examples of capital mobility investments. High-resolution maps are available in Appendix A.

Freight policy recommendations and the full list of recommended capital investments in freight preservation and mobility are available in Chapter 10.

Aerospace Supply Chain: Example Freight Mobility Improvements



I-5 Tacoma to Everett mobility improvements
Multiple improvements to I-5.

Phase I -Re-designation of SR 529 & Improvements
Access improvements from Port of Everett to I-5 and intersection improvements to better accommodate over-dimensional freight traffic.

I-90 Snoqualmie Pass--widen to Easton
Widening and interchange improvements.

November 2013

LEGEND

- Aerospace Product and Parts Manufacturing Business Locations

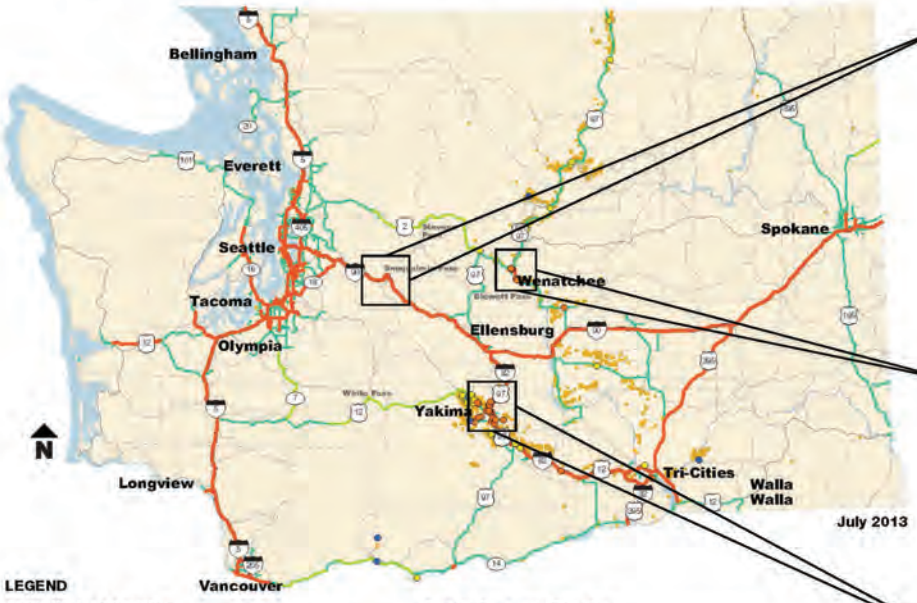
Freight Economic Corridors

- **T1 Truck Freight Economic Corridors**: Freight corridors carrying more than 10 million tons per year
- **T2 Truck Freight Economic Corridors**: Freight corridors carrying 4 million to 10 million tons per year.
- **Alternative Freight Economic Corridors**: Corridors carrying 600,000 to 4 million tons per year and serve as alternatives to T1 freight routes

Source: Washington State Department of Revenue; Washington State Freight and Goods Transportation System

Aerospace products and parts are a $52.2 billion industry in Washington State

Apple Supply Chain: Example Freight Mobility Improvements



I-90 Snoqualmie Pass--Widen to Easton
Widening and interchange improvements

SR 28 East Wenatchee corridor
Widening and interchange improvements to improve mobility and safety

I-82 Yakima – Union Gap economic development improvements
Widening I-82 between North First Street and Yakima Avenue and improving connections to the local systems

LEGEND

Apple Packing Facilities
- In Urban Area
- In Rural Area: within 5 mile radius of T1/T2 highways
- In Rural Area: outside 5 mile radius of T1/T2 highways

Apple Orchard

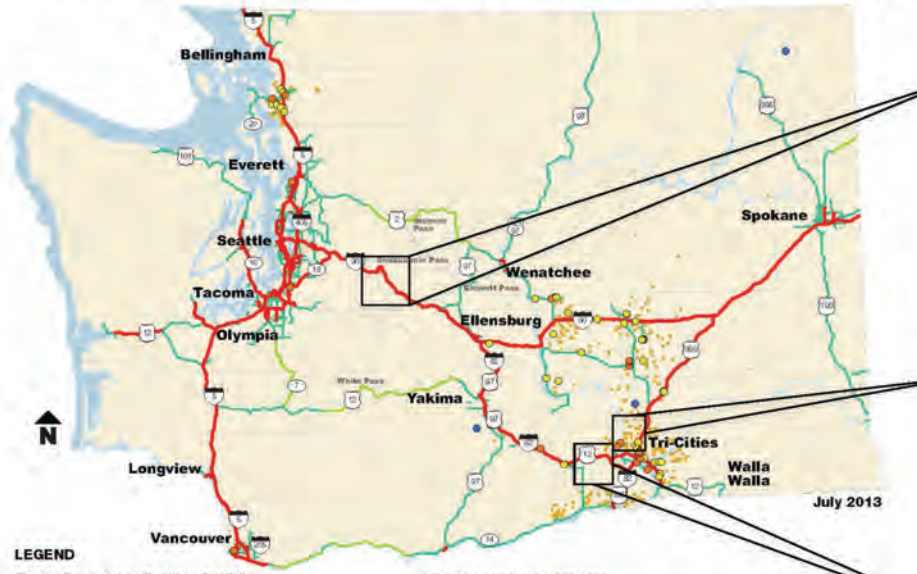
Freight Economic Corridors
- **T1 Truck Freight Economic Corridors**: Freight corridors carrying more than 10 million tons per year[1]
- **T2 Truck Freight Economic Corridors**: Freight corridors carrying 4 million to 10 million tons per year.
- **Alternative Freight Economic Corridors**: Corridors carrying 600,000 to 4 million tons per year and serve as alternatives to T1 freight routes

Source: Washington State Apple Commission; Washington State Freight and Goods Transportation System

[1] Tonnage is the gross truck weight moved by the corridors, not tied to specific commodities.

Apples are a $1.83 billion industry in Washington State

Potato Supply Chain: Example Freight Mobility Improvements



I-90 Snoqualmie Pass--widen to Easton
Widening and interchange improvements

Glade North Overlay
Widening and overlaying existing road and upgrading to all-weather standard

I-82 West Richland - Red Mountain interchange
Multi-phase improvements to Improve intersection safety and access

LEGEND

Potato Processing/Packing Facilities
- In Urban Area[1]
- In Rural Area: within 5 mile radius of T1/T2 highways
- In Rural Area: outside 5 mile radius of T1/T2 highways

Potato Field

Freight Economic Corridors
- **T1 Truck Freight Economic Corridors**: Freight corridors carrying more than 10 million tons per year[2]
- **T2 Truck Freight Economic Corridors**: Freight corridors carrying 4 million to 10 million tons per year.
- **Alternative Freight Economic Corridors**: Corridors carrying 600,000 to 4 million tons per year and serve as alternatives to T1 freight routes

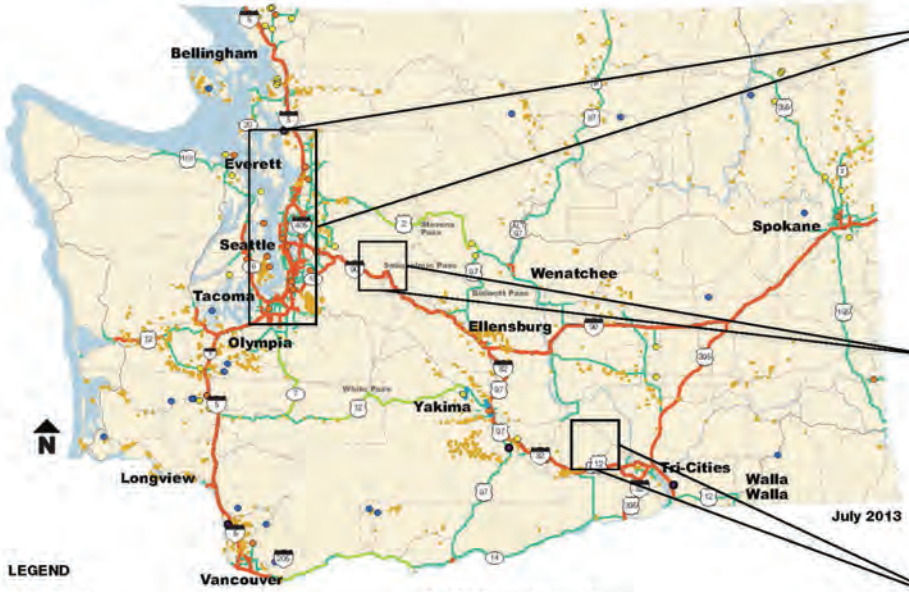
Source: Washington State Potato Commission; Washington State Freight and Goods Transportation System 2011 Update

[1] The term 'urban area' means the highway urban and urbanized areas defined by FHWA after each decennial US Census. It includes all areas with 50,000 or more people by the Census bureau, and urban areas of 5,000 through 49,999 people, using city limits or Census Designated Place boundaries with some adjustments.

[2] Tonnage is the gross truck weight moved by the corridors, not tied to specific commodities.

Potatoes are a $771 million industry in Washington State

Milk Supply Chain: Example Freight Mobility Improvements



I-5 Tacoma to Everett mobility improvements
Multiple improvements to I-5.

I-90 Snoqualmie Pass--widen to Easton
Widening and interchange improvements.

I-82 West Richland - Red Mountain interchange
Multi-phase improvements to Improve intersection safety and access.

LEGEND

Dairy Plants
- In Urban Area
- In Rural Area: within 5 mile radius of T1/T2 highways
- In Rural Area: outside 5 mile radius of T1/T2 highways

Beef Packing/Processing Facilities
- In Rural Area: within 5 mile radius of T1/T2 highways

Pasture

Freight Economic Corridors
- **T1 Truck Freight Economic Corridors**: Freight corridors carrying more than 10 million tons per year
- **T2 Truck Freight Economic Corridors**: Freight corridors carrying 4 million to 10 million tons per year.
- **Alternative Freight Economic Corridors**: Corridors carrying 600,000 to 4 million tons per year and serve as alternatives to T1 freight routes

Source: Washington State Department of Agriculture; Washington State Freight Goods Transportation System

Milk is a $1.28 billion industry in Washington State

Wheat Supply Chain: Example Freight Mobility Improvements

West Vancouver Freight Access
New freight rail entrance to the Port of Vancouver from the mainline and internal rail track storage to accommodate unit trains.

PCC Freight Rail Preservation
Multiple preservation and rehabilitation projects.

Ice Harbor Lock & Dam
Lock and dam maintenance project.

LEGEND

Economic rail corridors:
- R1 - Greater than 25 million tons
- R2 - 1 million to 5 million tons
- R3 - 5 hundred thousand to 1 million tons
- R4 - 1 hundred thousand to 5 hundred thousand tons

Economic waterway corridors:
- W1 - Greater than 25 million tons
- W2 - 10 million to 25 million tons
- W3 - 5 million to 10 million tons
- W4 - 2.5 million to 5 million tons

Major marine port | Barge ports | Grain Shuttle facilities | Barge intermodal facility (non-port) | Cereal Grain Production Field | County line

Source: WSDOT Freight System Division – 2012 Freight Rail Data.

Wheat is a $1.14 billion industry in Washington State

5. We can meet the challenge together.

The Washington State Freight Mobility Plan is the result of a fully collaborative process. At its outset, WSDOT sought input on the plan's scope from all MPOs and RTPOS, all Tribes, freight associations including the Washington Public Ports Association and Washington Trucking Association, and the FMSIB.

The plan also advanced through the guidance of three technical teams focused on the plan's three objectives. Representatives from multiple sectors – local government, Tribes, businesses, freight carriers, freight system customers and users, and air quality experts – were asked for their input and worked together to aid WSDOT to:

- Develop and prioritize a list of important, specific and measurable freight performance goals based on customer refinements and state and federal transportation policies
- Recommend data sets and sources to measure progress towards achieving the state freight goals

Similar to its creation, the plan's implementation will benefit from input and support of freight system stakeholders, local and tribal governments, and many other members of the community. WSDOT would be happy to discuss the Freight Plan's findings with your organization.

The full report is available for download at:
http://www.wsdot.wa.gov/Freight/FreightMobilityPlan

Washington State Freight Mobility Plan
Quick Flip Guide

In Their Own Words

Washington business leaders speak up about freight's impact on our economy. Please visit these online testimonials, complete with useful statistics, videos, and infographics at: http://www.wsdot.wa.gov/Freight/FreightMobilityPlan.

For more information, please contact:

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